The economic value of the bicycle industry and cycling in the United Kingdom

Report to the Bicycle Association of Great Britain

March 2017

SQW

Contents

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Introduction

BAGB members provided insight from their experience as bicycle importers, distributers and retailers

In 2016 the Bicycle Association of Great Britain (BAGB) commissioned SQW to analyse data on the economic impact of the bicycle industry and cycling in the UK. BAGB members provided insight from their experience as bicycle importers, distributers and retailers, and assisted in the interpretation of HM Revenue and Customs (HMRC) bicycle import data. SQW built an economic impact model using these data, applying standard ratios for gross value added (GVA) and employment, using assumptions generated by the London School of Economics (LSE) in 2011. SQW also examined patterns and trends in bicycle ownership and use in order to provide economic impact data for the World Health Organisation (WHO) Health Economic Assessment Tool (HEAT) for cycling.

Economic value of the bicycle industry

The BAGB estimates that bicycle retail sales account for 50% of turnover in the bicycle industry, with the remainder derived from the sale of bicycle parts, accessories and clothing. They also estimate 95% of bicycles sold to users in the UK are imported, with the remainder manufactured in the UK. SQW estimates for the economic value of the bicycle industry are based on secondary analysis available HMRC data for bicycle imports and derived retail sales data excluding e-bikes, bicycles manufactured in the UK, and bicycle parts, accessories and clothing. They should therefore be regarded as conservative estimates.

How many bicycles are imported?

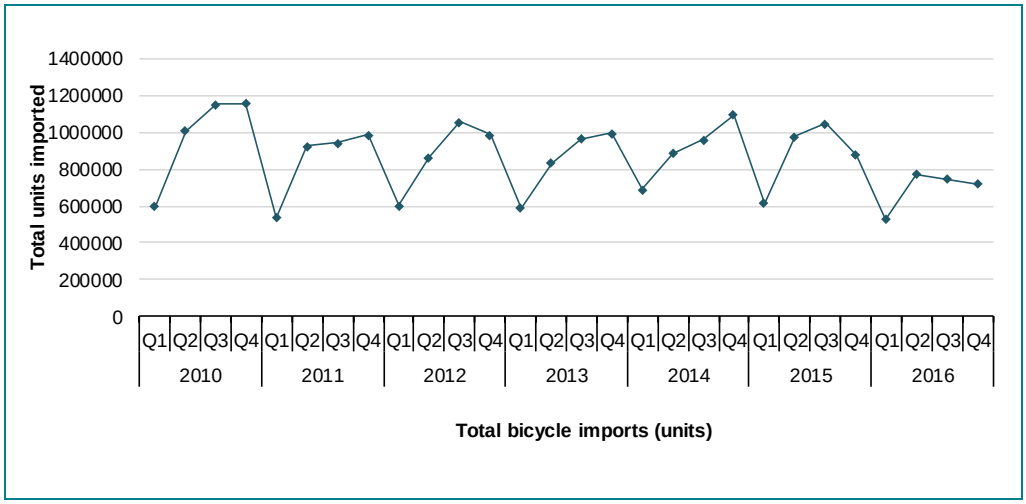
Table 1 and Figure 1 below extract import unit data for 'BICYCLES, NOT MOTORISED, WITH BALL BEARINGS' (TTCN 87120030) from HMRC UK INTRASTAT and ALLSTAT data provided by Business & Trade Statistics Ltd. These data have been aggregated to provide quarterly and annual time series showing the volume of UK bicycle imports since 2010.

Table 1: Imported bicycles (units)

	Q1	Q2	Q3	Q4	Total
2010	596,461	1,008,193	1,150,913	1,154,239	3,909,806
2011	536,364	925,835	941,338	985,975	3,389,512
2012	600,722	862,344	1,055,922	986,445	3,505,433
2013	588,324	833,512	961,435	993,234	3,376,505
2014	688,177	887,023	959,767	1,095,899	3,630,866
2015	616,069	978,284	1,045,568	878,595	3,518,516
2016	529,218	774,019	745,763	719,043	2,768,043

Source: HMRC UK INTRASTAT and ALLSTAT data

Figure 1: Imported bicycles (units)



Source: HMRC UK INTRASTAT and ALLSTAT data

Fewer bicycles were imported in each quarter throughout 2016 compared with the same quarters in previous years

The data indicate fewer bicycles were imported in 2016 (2.8 million units) than 2010 (3.9 million units), with fewer bicycles imported in each quarter throughout 2016 compared with the same quarters in the previous six years.

How many e-bikes are imported?

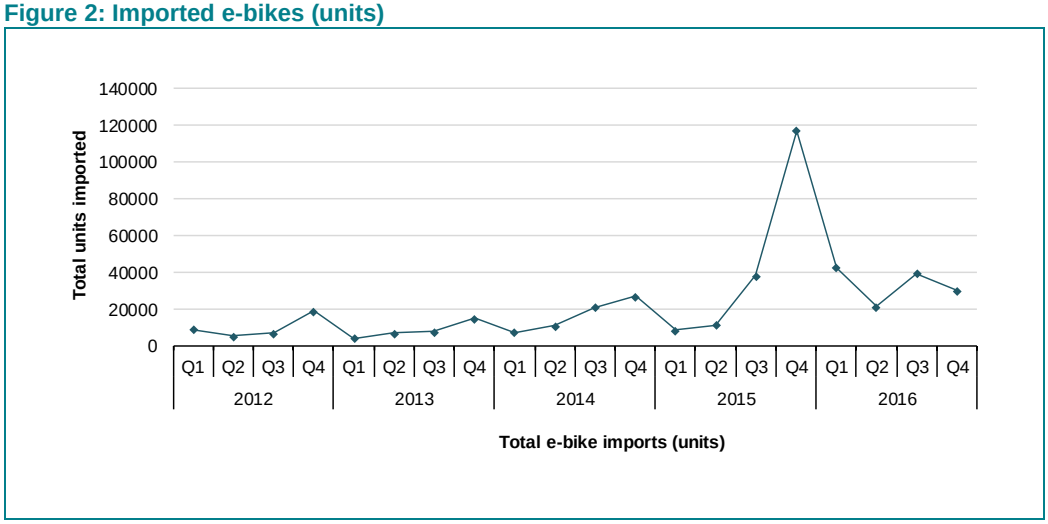
The Table 2 and Figure 2 below extract unit import data for 'CYCLES, WITH AN AUXILIARY ELECTRIC MOTOR WITH A CONTINUOUS RATED POWER <= 250 W' (TTCN 87119010) from HMRC UK INTRASTAT and ALLSTAT data provided by Business & Trade Statistics Ltd (2012 is the first year in which TTCN 87119010 data were reported).

Table 2: Imported e-bikes (units)

	Q1	Q2	Q3	Q4	Total
2012	8647	5014	6871	18784	39316
2013	3914	6826	7501	14744	32985
2014	7284	10647	21006	26705	65642
2015	8421	11049	38207	117320	174997
2016	42364	21392	39169	30230	133155

Source: HMRC UK INTRASTAT and ALLSTAT data

Figure 2: Imported e-bikes (units)



Source: HMRC UK INTRASTAT and ALLSTAT data

The data indicate total e-bike imports in 2015 of almost 175,000 units exceeded total imports for the previous three years combined. The data suggest 2015 saw dramatic growth in the second half of the year before imports fell away in the first half of 2016, recovering in 2016 Q3 before dropping away again in 2016 Q4 to reach just over 133,000 units for 2016. The BAGB regards the peaks in Q4 of 2015 and Q1 of 2016 as anomalous, and considers the period saw steady growth accelerating from 2014 to 2016.

What is the value of bicycle sales?

The value of bicycle sales can be calculated using the HMRC bicycle import unit data presented above in Table 1 and Figure 1, and average bicycle costs for different bicycle user groups generated by the LSE (2011) shown in Table 3, with prices adjusted for inflation using the HM Treasury Gross Domestic Product deflator. The results presented in Table 4 assume the proportions of different user types and adjusted average retail prices remain constant throughout the period, and 90% of all imported bicycles were sold to bicycle users within six months.[1]

Table 3: Bicycle user groups and bicycle retail prices

User types	Occasional cyclist	Regular cyclist	Frequent cyclist	2015 average retail prices
Family	30%	15%	2%	£235
Recreational user	70%	37%	5%	£270
Commuter	0%	40%	43%	£334
Enthusiast	0%	8%	50%	£1,295

Source: LSE (2011), with 2015 retail prices adjusted for inflation

Almost half of the total value of bicycle sales was generated by enthusiast cyclists, followed by recreational users

In 2015, almost half (46%) of the total value of bicycle sales was generated by enthusiast cyclists, followed by recreational users (26%), commuters (19%) and family users (9%). Unsurprisingly, in the same year almost half of the annual value of bicycle sales was generated by frequent cyclists (47%, people who cycle at least once a week), followed by regular cyclists (28%, people who cycle at least once a month) and occasional cyclists (24%, people who cycle less than this). These values reflect differential average bicycle costs for different user groups.

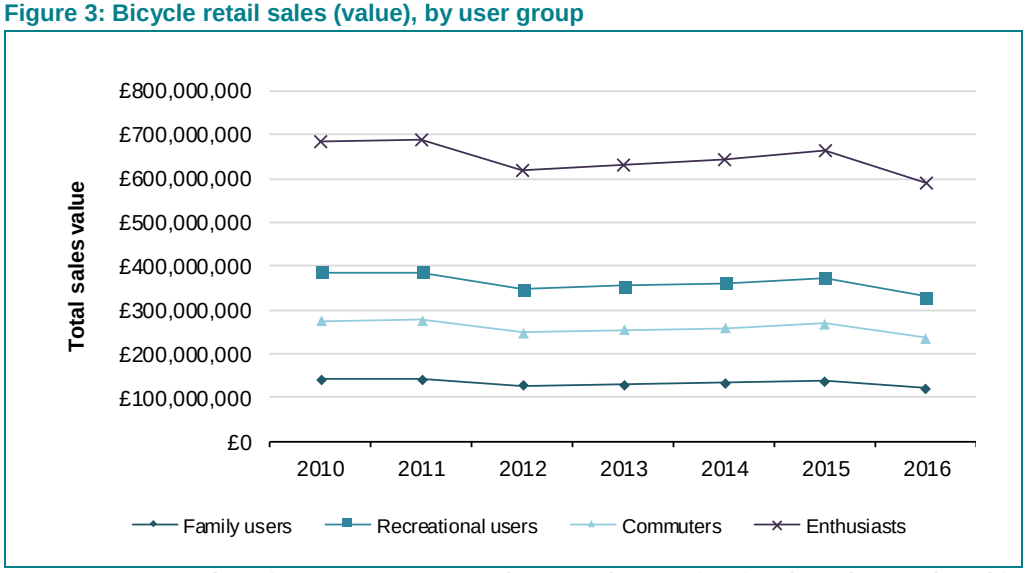
Table 4: Bicycle retail sales (value), by user group

User type	2010	2011	2012	2013	2014	2015	2016
Family users	£141,077,302	£141,393,428	£127,245,194	£130,015,902	£132,480,429	£136,989,810	£121,128,387
Recreational users	£385,133,822	£385,996,829	£347,372,874	£354,936,764	£361,664,799	£373,975,178	£330,674,303
Commuters	£275,836,475	£276,454,569	£248,791,728	£254,209,057	£259,027,739	£267,844,549	£236,832,054
Enthusiasts	£684,974,325	£686,509,215	£617,815,124	£631,267,775	£643,233,826	£665,128,277	£588,116,117
Totals	£1,487,021,924	£1,490,354,041	£1,341,224,920	£1,370,429,498	£1,396,406,793	£1,443,937,813	£1,276,750,860

Source: SQW analysis of HMRC UK INTRASTAT and ALLSTAT data, LSE (2011), with retail prices adjusted for inflation

[1] This assumption has been applied to the data in order to set GVA for the industry within a reasonable timeline, because GVA is not generated until retail sales occur.

Figure 3: Bicycle retail sales (value), by user group



Source: SQW analysis of HMRC UK INTRASTAT and ALLSTAT data, LSE (2011), with retail prices adjusted for inflation

By 2016, total bicycle sales in the UK amounted to £1.28 billion

Higher sales value was generated by enthusiast cyclists relative to other user groups

The data indicate higher sales value was generated by enthusiast cyclists relative to other user groups, and an overall decline of bicycle sales value over time. In 2016, the value of bicycle sales was less than in any of the previous six years: in 2010 total bicycle sales amounted to £1.49 billion; by 2016 total bicycle sales amounted to £1.28 billion.

What is the gross value added by bicycle sales?

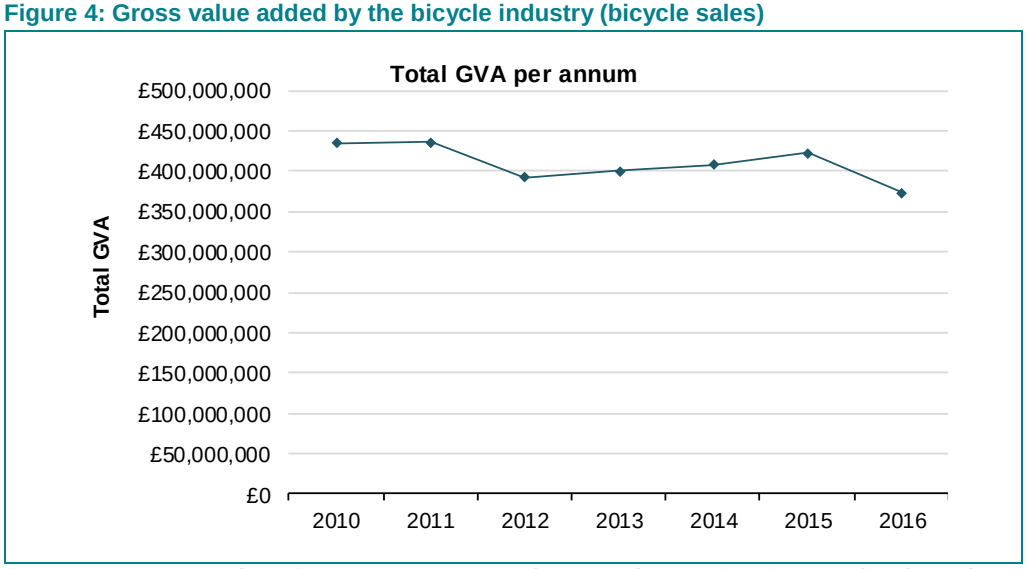
Gross value added (GVA) provides a monetary value for the amount of goods and services produced less their cost of production. Estimates for GVA for bicycle sales in the UK have been calculated by applying a standard turnover to GVA ratio of 29% to bicycle sales values presented in Table 4. The results are presented in Table 5 and Figure 4 below.

Table 5: Gross value added by the bicycle industry (bicycle sales)

	Q1	Q2	Q3	Q4	Total
2010	£112,910,065	£136,366,634	£69,018,068	£116,660,659	£434,955,427
2011	£133,175,165	£133,560,025	£62,064,086	£107,130,798	£435,930,074
2012	£108,924,691	£114,089,756	£69,511,120	£99,784,088	£392,309,654
2013	£122,183,507	£114,144,141	£68,076,514	£96,447,862	£400,852,023
2014	£111,250,168	£114,929,714	£79,630,767	£102,639,760	£408,450,409
2015	£111,057,159	£126,809,350	£71,286,961	£113,199,810	£422,353,280
2016	£120,985,418	£101,664,534	£61,237,204	£89,563,770	£373,450,927

Source: SQW analysis of HMRC UK INTRASTAT and ALLSTAT data, LSE (2011) average bicycle retail price (adjusted)

Figure 4: Gross value added by the bicycle industry (bicycle sales)



Source: SQW analysis of HMRC UK INTRASTAT and ALLSTAT data, LSE (2011) average bicycle retail price (adjusted)

Gross value added by the bicycle industry amounted to £373 million in 2016

The results follow trends set by bicycle sales values presented in Table 4 and Figure 3 above. In 2016, GVA generated by the bicycle industry was less than at any time in the previous six years: in 2010 GVA amounted to £435 million; by 2016 GVA amounted to £373 million.

What are labour costs and employment in the bicycle industry?

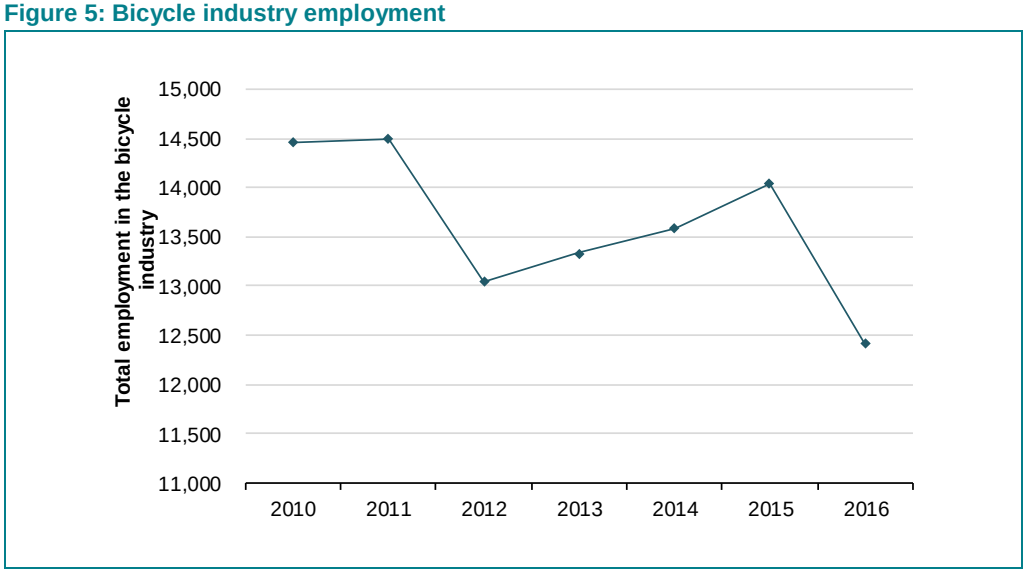
Total labour costs and employment generated by importing, distributing and selling bicycles in the UK have been estimated by applying a standard turnover to employment ratio of 15% to the bicycle sales values presented in Table 4 above, using average wholesale and retail labour costs derived from the Annual Household Survey of Hours and Earnings. The results are shown in Table 6 and Figure 5 below.

Table 6: Bicycle industry employment

	Total employment costs (2015 prices)	Total employment
2010	£226,479,737	14,466
2011	£226,987,233	14,498
2012	£204,274,236	13,047
2013	£208,722,217	13,332
2014	£212,678,669	13,584
2015	£219,917,845	14,047
2016	£194,454,564	12,420

Source: http://www.gov.scot/Resource/0043/00432251.pdf

Figure 5: Bicycle industry employment



Source: http://www.gov.scot/Resource/0043/00432251.pdf

The data indicate declining employment over the past five years

The data indicate declining employment from almost 15,000 employees in 2011 to just over 13,000 in 2012, climbing to just over 14,000 in 2015 before falling to just over 12,400 in 2016, the lowest total employment figure for six years.

Summary

Fewer bicycles were imported in 2016 (2.8 million units) than 2010 (3.9 million units), and fewer bicycles were imported for each quarter in 2016 compared with all previous years.

By contrast, from a much lower base, e-bike imports in 2015 (175,000 units) exceeded total imports for 2012, 2013, and 2014 combined, but declined in 2016 to 133,000 units. The BAGB regards the peaks in Q4 of 2015 and Q1 of 2016 as anomalous.

Enthusiast cyclists generated higher bicycle sales relative to other user types based on higher average bicycle costs. Total bicycle sales revenue in 2010 amounted to £1.49 billion, but by 2016 declined to £1.28 billion, the lowest annual total for seven years.

The GVA for the bicycle industry follows bicycle sales data. In 2010 GVA amounted to £435 million, but by 2016 GVA declined to £373 million.

Employment importing, distributing and selling bicycles fluctuated from a high of almost 15,000 employees in 2011 to a low of just over 12,400 employees in 2016, the lowest annual total for six years.

The economic value of cycling

Who cycles?

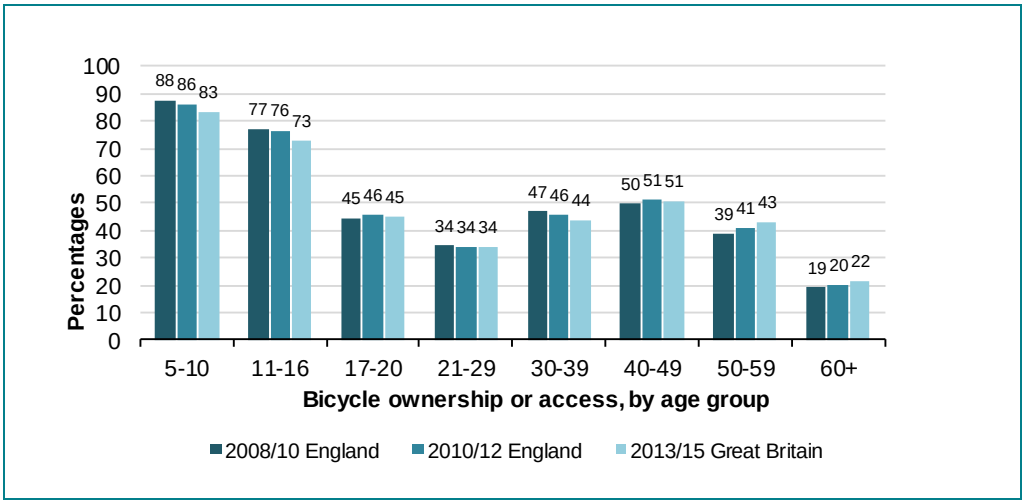
In 2011, the LSE estimated 27% of the adult population (13,000,000 people) cycled. Subsequent National Travel Survey (NTS) reports indicate little change in this proportion. In 2015 the adult cycling population aged 18+ can therefore be estimated to be in excess of 13,860,000.

Who owns or has access to a bicycle?

The proportion of children who own or have access to a bicycle has declined steadily since 2008/10

Bicycle ownership and access remained constant at around 42% of the population between 2008/10 and 2013/15, with children and young people aged 5-16 the age group most likely to own or have access to a bicycle. However, bicycle ownership and access for different age groups changed during this period. The proportion of children and young people aged 5-16 who owned or had access to a bicycle declined steadily by 4% between 2008/10 and 2013/15, while among older people aged 50-59 bicycle ownership or access increased by the same proportion. The data are shown in Figure 6 below.

Figure 6: Bicycle ownership or access, by age group



Source: National Travel Survey

Who cycles how far and how often?

Almost one billion miles were cycled in the UK in 2015

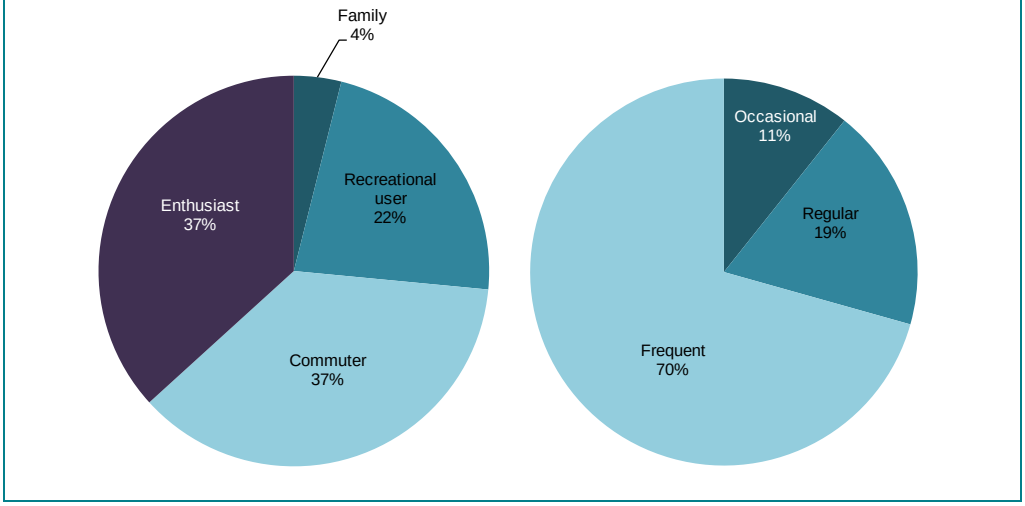
Estimates for the number of miles cycled per year are derived by applying NTS distances cycled to the total adult cycling population segmented by bicycle user groups proposed by the LSE in 2011. The data indicate that in 2015, almost one billion (990,855,918) miles were cycled in the UK. Almost three quarters (74%) of these miles were cycled by commuters and enthusiasts. Unsurprisingly, almost the same proportion (71%) of miles were cycled by frequent cyclists, followed by regular cyclists (19%) and occasional cyclists (19%). The data are shown in Table 7 **and** Figure 7 below.

Table 7: Total miles cycled in 2015, by different user groups

Bicycle user type	Distance travelled per year (miles)	Frequency of use	Distance travelled per year (miles)
Family	38,801,100	Occasional	105,954,981
Recreational user	223,868,528	Regular	184,967,191
Commuter	364,111,362	Frequent	699,933,746
Enthusiast	364,074,927		
Total	**990,855,918**		**990,855,918**

Source: National Travel Survey NTS0605 and LSE 2011

Figure 7: Proportion of miles cycled by different user groups in 2015

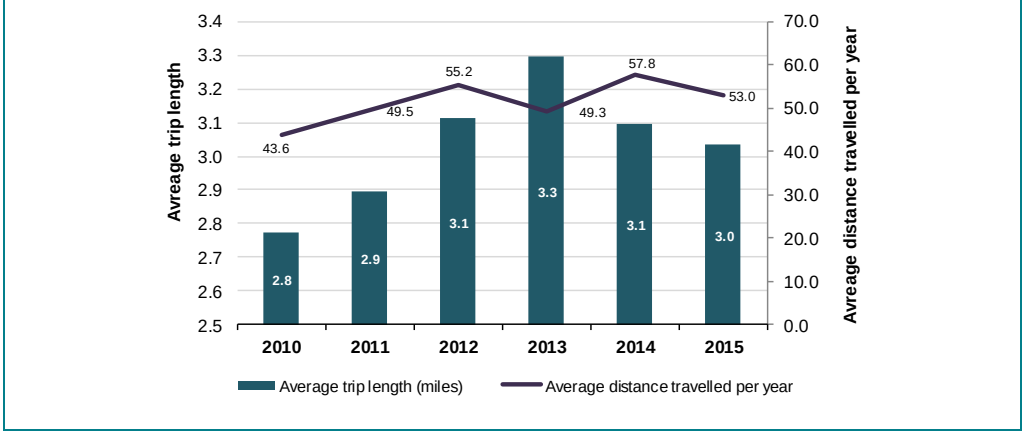


Source: National Travel Survey NTS0605 and LSE 2011

An average of three miles per trip and 53 miles per person per year were cycled in 2015

The vast majority of these miles were accumulated over very short trips with low annual mileage. An average of three miles per trip and 53 miles per person per year were cycled in 2015, slightly less than in 2014, as shown in Figure 8 below.

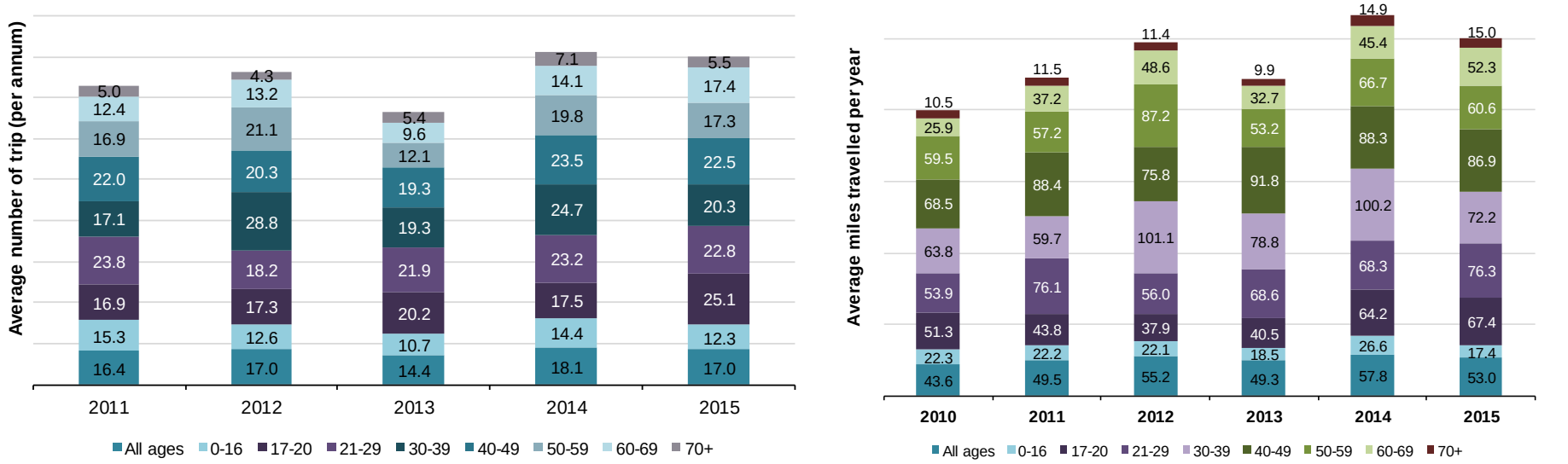
Figure 8: Average trip length and annual mileage



Source: National Travel Survey

Figure 10 indicates more trips and more miles were cycled in 2015 than in 2010. However, when miles and trips cycled over time are considered by age group, it is clear that children and young people aged 0-16 cycled less in 2015 while people aged 40 and over cycled more, reflecting bicycle ownership and access data presented in Figure 6 above.

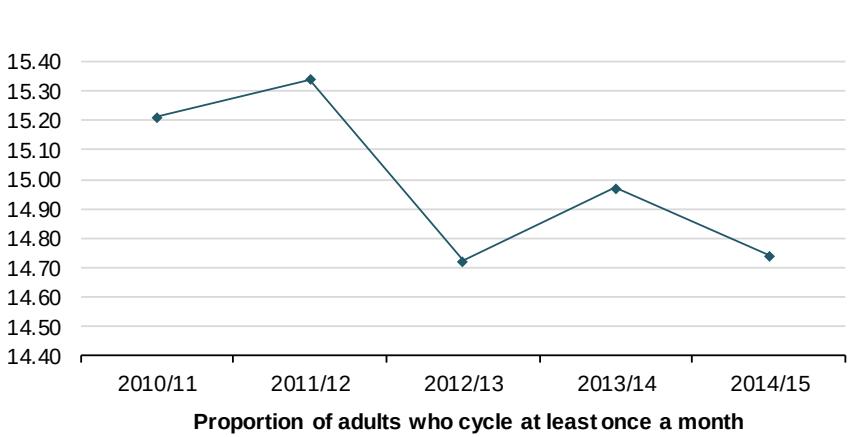
Figure 9: Average number of trips miles cycled per year, by age group

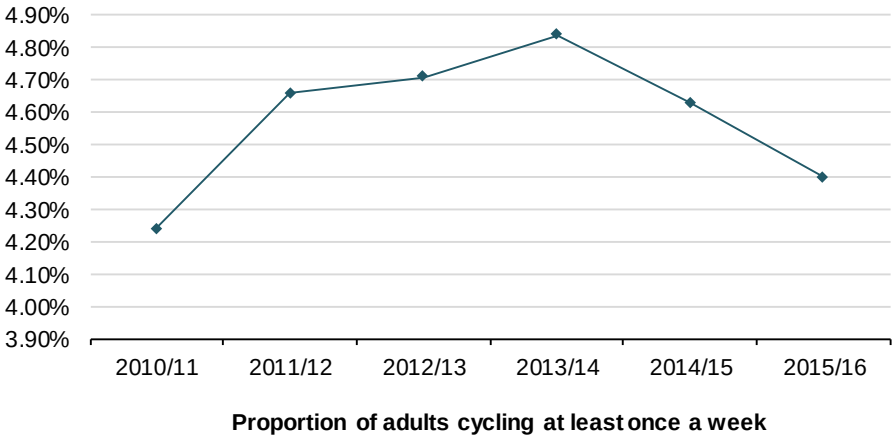


Source: National Travel Survey

The recent decline in average trip length and annual distances between 2014 and 2015 revealed in Figure 8 and Figure 9 is also reflected in the falling proportion of adults who cycle frequently (at least once a week) or regularly (at least once a month) in England, as presented in Figure 10 below.

Figure 10: Adults who cycle regularly or frequently

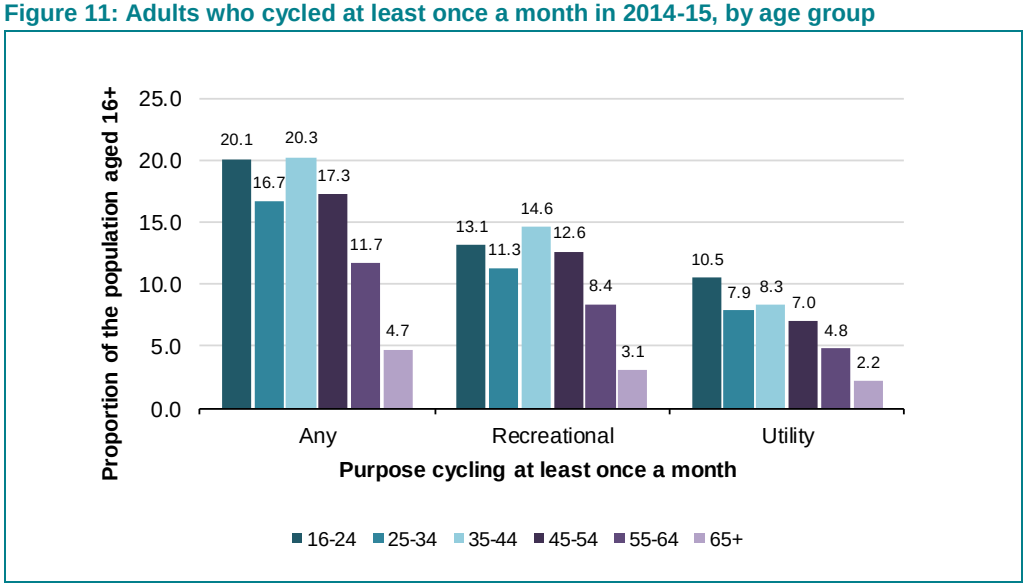




Source: Active People Survey

Looking more closely at the ages of adults aged 16+ who cycled at least once a month in 2014/15, Figure 11 shows young people aged 16-24 and those aged 35-44 cycled more than other adults, and in every age group more people cycled for recreation than utility purposes.

Figure 11: Adults who cycled at least once a month in 2014-15, by age group



Source: Active People Survey

Cycling health benefits are valued at £1,056,598,000 in 2015

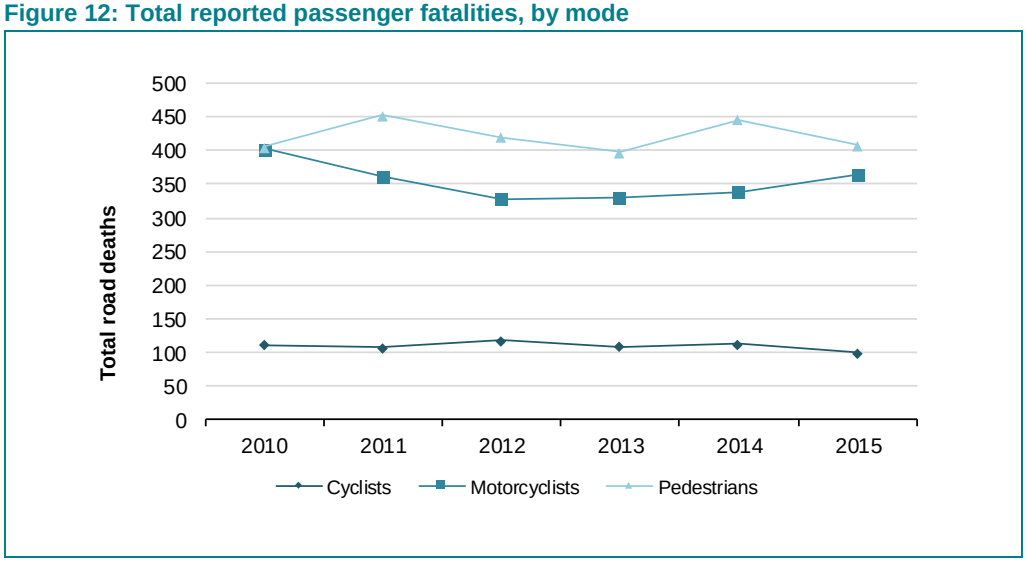
The average distance cycled per person per day estimated from these figures has been used in the WHO HEAT model to estimate the total value in health benefits of £1,056,598,000 in 2015. This compares with £1,807,000,000 in economic benefits derived from increased physical activity estimated by the University of Leeds in 2015,[2] and represents around 60% of the total economic benefits of cycling reported by the Department for Transport in 2014, with additional economic benefits derived from decongestion and other factors.[3] Therefore the analysis presented here represents a conservative estimate of the total economic value of cycling supported by the UK bicycle industry.

Actual and perceived risks cycling on the road

The recent decline in cycling observed in the data presented above may be attributed in part to a growing perception that roads too dangerous for cycling. This contrasts with evidence showing fewer fatalities for cyclists than for motorcyclists and pedestrians, as presented in Figure 12.

[2] Fiona Crawford and Robin Lovelace, *The benefits of getting England cycling* (University of Leeds, January 2015).
[3] *Value for Money Assessment for Cycling Grants* (Department for Transport, August 2014).

Figure 12: Total reported passenger fatalities, by mode

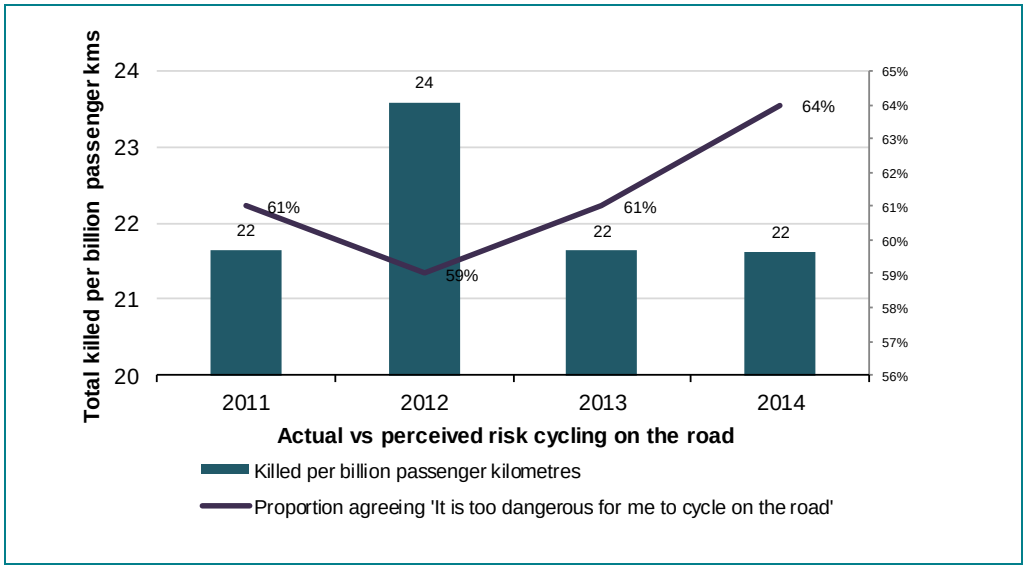


Source: Department for Transport, Reported road accidents and casualties

Despite a declining cyclist fatality rates, fear of road danger is increasing

Yet fear of road danger is increasing, despite declining cyclist fatality rates (deaths per billion kilometres cycled), as shown in Figure 13 below. In 2015 (the year following the last release of Public Attitude Statistics), the cyclist fatality rate fell to 19, down from 22 fatalities per billion kilometres cycled in 2013 and 2014

Figure 13: Actual vs perceived risk cycling on the road



Source: DfT Reported Road Accidents and Casualties, Public Attitudes Statistics.

Summary

Around 27% of the adult population, almost 14 million people in the UK, ride a bicycle.

Less than half (42%) of the total population own or have access to a bicycle. More than three quarters of children and young people own or have access to a bicycle, but fewer children and young people have access today than a decade ago.

In 2015, almost one billion miles were cycled in the UK. Almost three quarters (74%) of these miles were cycled by commuters and enthusiasts. Unsurprisingly, almost the same proportion (71%) of miles were cycled by frequent cyclists, followed by regular cyclists (19%) and occasional cyclists (19%).

Young people aged 16-24 and those aged 35-44 cycle more than other people, and in every age group more people cycle for recreation than utility purposes.

More trips and more miles were cycled in 2015 than in 2010, but children and young people cycle less today while older people cycle more.

The average distance cycled per person in 2015 generated a total value in health benefits of £1,056,598,000 according to the WHO HEAT model based on average distance cycled each year, less than other economic impact estimates including physical activity and transport benefits.

Media-driven public attitudes towards road danger bear little relationship to evidence of actual cycling fatalities, but may deter people from cycling.

Conclusion

Without the bicycle industry, the UK economy would benefit little from cycling

Like other industries, the bicycle industry contributes to the UK economy by generating GVA and employment. More than this, the bicycle industry provides the bicycles (and parts, accessories and clothing) that contribute to the economic impact of cycling. Simply put, without the bicycle industry importing, distributing and selling bicycles, few bicycles would be ridden and the economy would benefit little from cycling.

Also like other industries, the bicycle industry faces challenges arising from general market conditions characterised by slowing consumer demand and overall increases in the cost of imported goods. With declining cycling levels, this makes more difficult the task of persuading those who do not own or ride a bicycle that cycling could be for them.

The bicycle industry faces a present danger with fewer children owning a bicycle and cycling today than a decade ago

In particular, the bicycle industry faces a present danger with fewer children and young people owning a bicycle and cycling today than a decade ago. Without securing cycling in childhood, it will be all the more difficult to persuade this next generation to take up cycling in later life.